

Digital Tools for Housing: From Vision to Completion

Michael Rose - Technical Services GIS, Shibogama First Nations Council
Jasmine Sohal, Lead – Technical Solutions, Esri Canada
Bryan Minhinnett – Account Manager, Esri Canada

What is GIS?

- Geographic Information Systems (GIS) bring together maps, data, and community knowledge to support better decisions about land, housing, and infrastructure.
- In a housing context, GIS helps communities:
 - See where homes are today and where future housing can be built
 - Respect land, culture, and community priorities by bringing spatial context into decisions
 - Combine technical data (parcels, servicing, inspections) with local knowledge
 - Improve transparency for leadership, housing managers, and community members

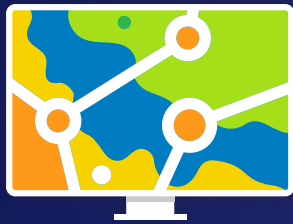


GIS is not just maps — it is a shared picture of land, housing, and progress that everyone can understand.

Housing Lifecycle: Planning → Building → Maintenance

- GIS supports housing from vision to completion and beyond.

Planning



- Understand land availability, constraints, and growth
- Visualize housing layouts before anything is built

Building



- Connect designs and BIM models to real-world locations
- Track construction progress spatially

Maintenance

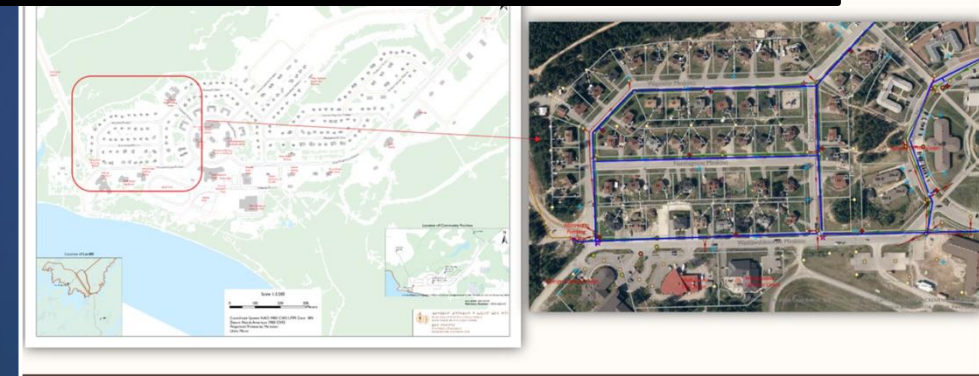
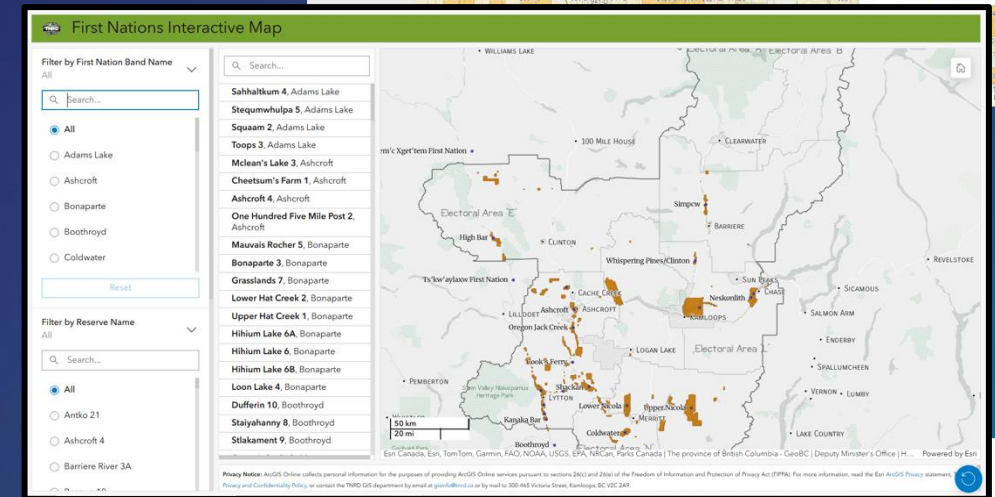
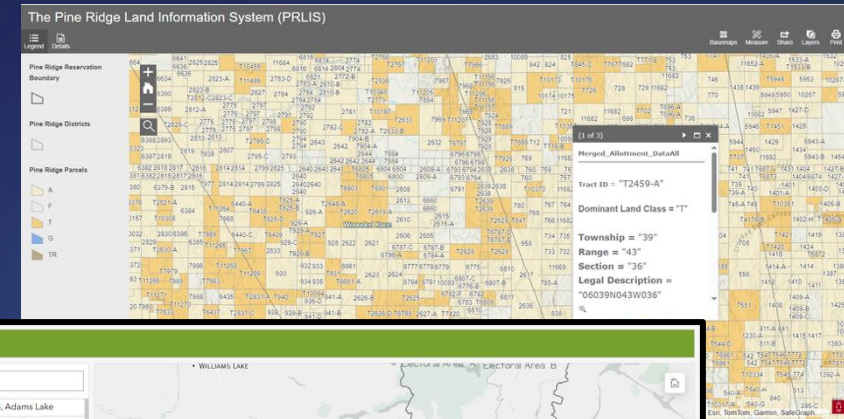


- Inspect homes in the field
- Track condition, repairs, and long-term asset health

GIS becomes the single source of truth across all phases

GIS in Planning

- GIS can support the Planning phase by:
 - Identify suitable land for housing (environment, access, servicing)
 - Visualize existing vs. future housing
 - Support funding discussions with clear maps and data
 - Share plans with leadership and community members

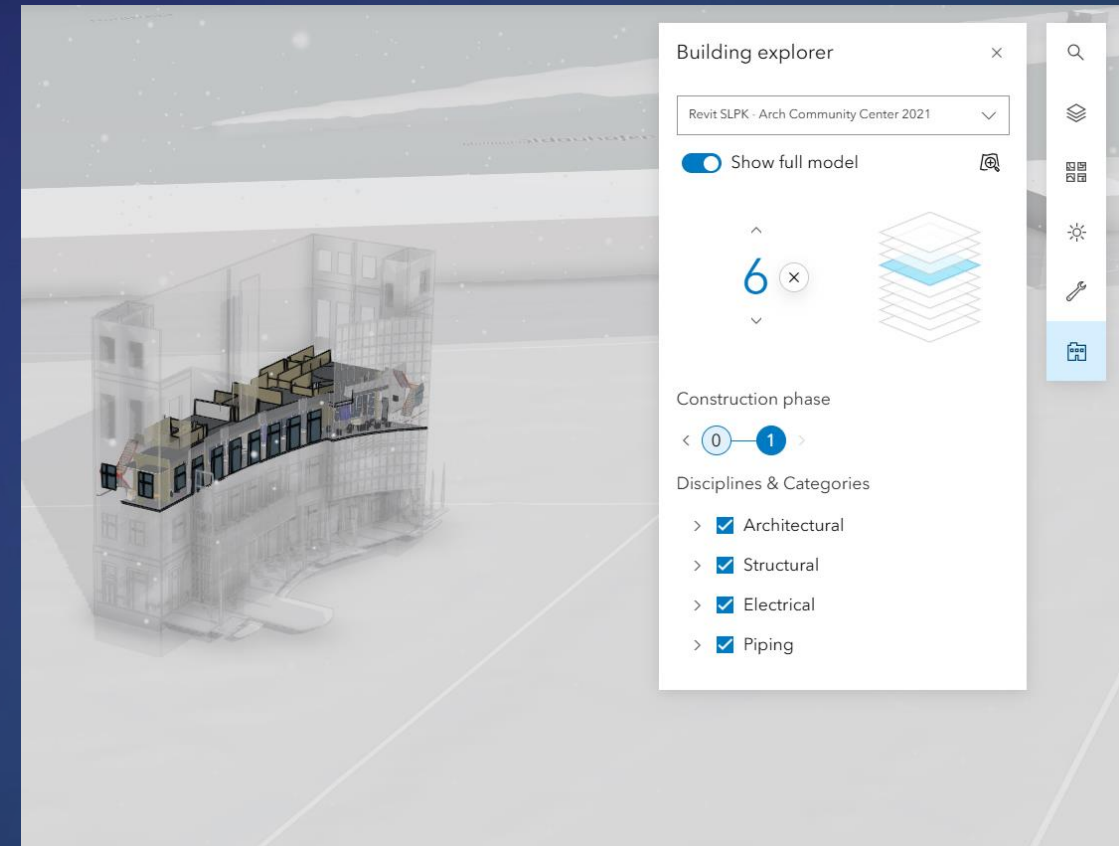


GIS helps turn long-term housing vision into something people can see, explore, and understand.

Demonstration

GIS in Building Management

- When BIM meets GIS:
 - BIM shows how a building is designed
 - GIS shows where that building lives in the community
- When you use GIS as the foundation:
 - 3D basemaps in ArcGIS provide real-world context (terrain, existing buildings, roads)
 - BIM models (homes, schools, community buildings) can be placed accurately on the land
- Why this matters:
 - Easier to visualize scale and fit within the community
 - Supports discussions with contractors, leadership, and funders
 - Makes complex design data accessible to non-technical audiences



GIS makes BIM understandable by putting buildings into their real-world, community context.

Demonstration

GIS in Housing Maintenance



- Housing maintenance challenges GIS can help solve:

- Knowing which homes need attention
- Tracking inspections consistently
- Seeing patterns across the community

- Using digital form tools like ArcGIS Survey123:

- Inspectors collect data on a mobile device
- Photos, condition ratings, and notes are tied to a specific home
- Results appear instantly on a map

GIS turns inspections into actionable, visible information instead of paperwork

Community Building Inventory Survey

Thank you for participating in this survey. Your responses will help us gather detailed information about the housing inventory in our community. Please answer the following questions about your home to the best of your ability.

Date of Visit

2/24/2026 10:22 AM

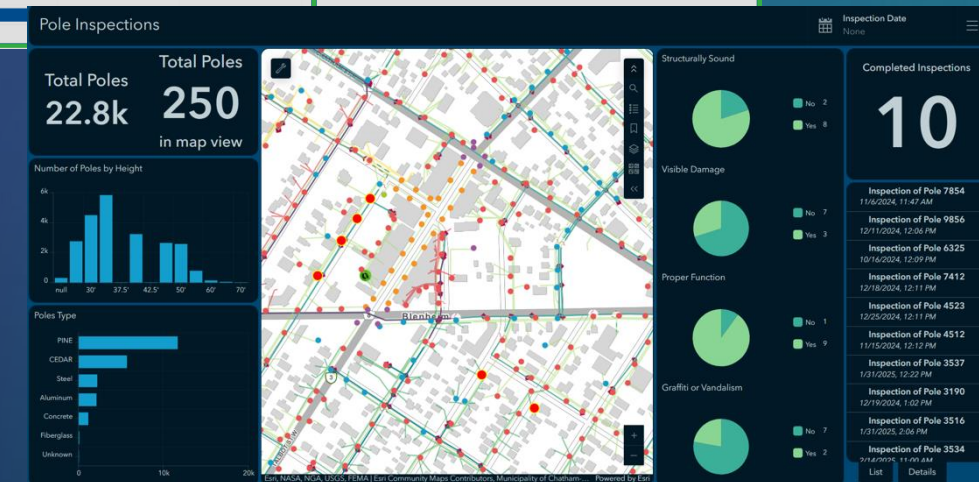
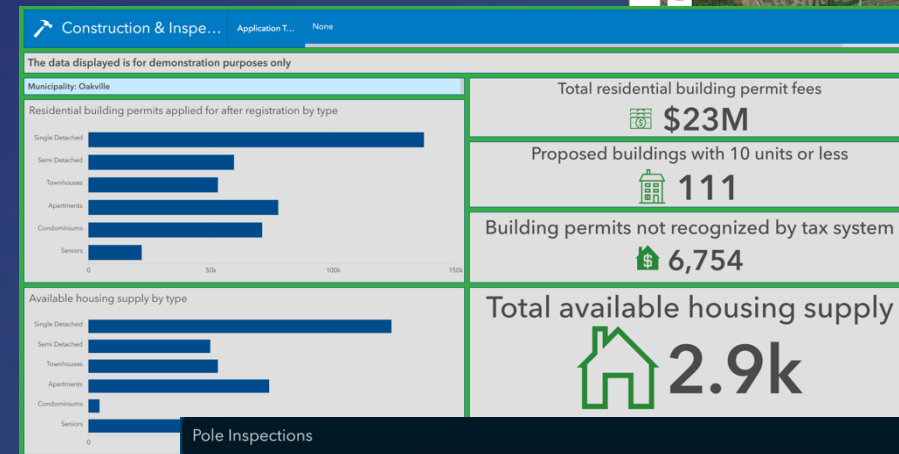
Your Name

Property Location

Find address or place

VICTORIA AVE

Powered by Esri



Demonstration

Bringing it all Together

- From vision to completion, GIS connects everything:
 - Planning: Where and how housing should grow
 - Building: What is being built and how it fits the land
 - Maintenance: How homes are cared for long-term
- Why this matters:
 - Better decisions, faster
 - Increased transparency and trust
 - Stronger storytelling for funding and leadership
 - Community-owned data supporting self-determination



GIS is not just technology — it is a tool that helps communities plan, build and care for housing with clarity and confidence.